


Claims

1. A virtual object for use in an object oriented environment; said virtual object comprising at least a user-sensible aspect and further comprising at least a functional aspect; the said user-sensible aspect being encapsulated as a user-sensible encapsulation, separately from said functional aspect.
2. A virtual object as claimed in claim 1, said object oriented environment being supported on a computer network comprising a first computer linked to a second computer; wherein the said user-sensible aspect is supported by said first computer and the said functional aspect is supported by said second computer.
3. A virtual object as claimed in claim 1, where said functional aspect is a behavioral aspect.
4. A virtual object as claimed in claim 1, where said user-sensible aspect comprises at least one of a display aspect and an interaction aspect.
5. A virtual object as claimed in claim 1, wherein said functional aspect is encapsulated in a functional encapsulation, and said functional encapsulation is exchangeable for an alternative functional encapsulation, thereby to alter the functionality of the said object.
6. A virtual object as claimed in claim 1, further at least partly defined by a relationship with a second object.

- 
7. A virtual object as claimed in claim 6, wherein said relationship is any one of a group comprising a coloring relationship, a positioning relationship, a shape relationship, a timing relationship, a movement relationship, a size relationship, a color relationship, a texture relationship and a reaction relationship.
8. A first virtual object within a virtual computing environment, said first virtual object having a relationship with a second virtual object, said relationship being such that an interaction with said first virtual object is operable to bring about a consequential interaction with at least said second object.
9. A first virtual object as claimed in claim 8 wherein said relationship is direct.
10. A first virtual object as claimed in claim 8, wherein said relationship with said second object is an indirect relationship, being a relationship involving at least one mediating interaction with at least one intermediate object.
11. A first virtual object as claimed in claim 10, said relationship with said second virtual object being defined by an order number, said order number being equal to the number of consequentially interacting objects.
12. A first virtual object as claimed in claim 11 having a predetermined interaction limit, and an interaction stopper operable to prevent

further consequential interactions occurring once a number of interactions corresponding to said interaction limit has been reached.

13. A first virtual object as claimed in claim 12, wherein said predetermined interaction limit is specific to at least one of an interaction order and an interaction type, and said interaction stopper is operable to stop interactions within said specificity.
14. A first virtual object as claimed in claim 8 wherein said consequential interaction with said at least second object comprises a change in at least one of location, movement, shape, size, status, internal parameters,color and texture of said second object.
15. A virtual reality environment comprising a scene and at least one virtual object supported by a scene database, said scene database having at least a first interchangeable functional unit associated therewith, said first interchangeable functional unit comprising functionality for said at least one first virtual object.
16. A virtual reality environment as claimed in claim 15, wherein said functionality for at least said first virtual object comprises behavior.
17. A virtual reality environment as claimed in claim 15, wherein said functionality for at least said first object comprises rules for determining allowable interactions therewith.

18. A virtual reality environment as claimed in claim 15, wherein said functionality comprises rules for determining non-allowable interactions therewith.
19. A virtual reality environment as claimed in claim 15, wherein said functionality comprises rules for restricting allowable interactions therewith.
20. A virtual reality networked computer environment as claimed in claim 15, said first virtual object comprising a user-sensible aspect, the said user-sensible aspect being encapsulated separately from said interchangeable functional unit.
21. A virtual reality networked computer environment as claimed in claim 20, wherein said user-sensible aspect comprises at least one of data for display of said virtual object and interaction features.
22. A virtual reality networked computer environment as claimed in claim 15, wherein said interchangeable functional unit is interchangeable to alter the functionality of said virtual object.
23. A virtual reality networked computer environment as claimed in claim 15, wherein said first interchangeable functional unit comprises object-specific functionality for a plurality of virtual objects.
24. A virtual reality networked computer environment as claimed in claim 20, further comprising at least one second virtual object where

Abstract

- 53

30. A virtual reality networked computer environment as claimed in claim 24, having a predetermined interaction total, and an interaction limiter operable to stop further consequential interactions occurring when a number of interactions equaling said predetermined interaction total has been reached.
31. A virtual reality networked computer environment as claimed in claim 24, wherein said consequential interaction with said at least one second object comprises a change in position of said second object
32. virtual reality networked computer environment as claimed in claim 24, wherein said consequential interaction with said at least one second object comprises any one of a group comprising a coloring interaction, a positioning interaction, a shape interaction, a timing interaction, a movement interaction, a size interaction, a color interaction, a texture interaction, a status interaction a sale and an internal parameter changing interaction. .33. A virtual reality networked computer environment as claimed in claim 24, wherein said relationship is dynamically defined by a logical query.
34. A dedicated control element for controlling the functionality of virtual objects belonging to a set of virtual objects within an environment,

said dedicated control element being associated with said environment, and comprising:

identification functionality for determining whether a virtual object within said environment is a member of said set, and

control functionality for processing events received from said identified virtual object.

35. A method for facilitating interaction by a plurality of users at a plurality of client terminals with at least a first object, said first object having display and interaction characteristics and functional characteristics, in a networked virtual reality environment; said method comprising:

encapsulating the display characteristics in a display and interaction part of said first object,

encapsulating functional characteristics in a functional part of said first object,

downloading said display and interaction part of said first object to user client terminals, and

retaining said functional part of said first object at a remote location networked with said user client terminals.

36. A method for restricting the number of consequential interactions to further virtual objects having a relationship with a first virtual object,

said consequential interactions resulting from an interaction with said first virtual object, said method comprising:

defining a maximum number of consequential interactions,

counting consequential interactions, and

stopping further interaction when said maximum number of consequential interactions is reached.

37. A method for restricting the number of consequential interactions to related further objects as claimed in claim 35 wherein said related further objects have a causative relationship with said first object.

38. A method for restricting the number of consequential interactions to related further objects as claimed in claim 36, wherein a change applied to a first object causes consequential changes being at least one of a group comprising a color, a position, a shape, a timing factor, a movement, a size, a color, a texture, a status, and an internal parameter of said further objects.

39. A method for restricting the number of consequential interactions to related further objects as claimed in claim 36, wherein said relationship is direct.

40. A method as claimed in claim 36, wherein said relationships with said further objects comprise indirect relationships, being relationships

F **E** **D** **C** **B** **A**

incorporating identification functionality within said dedicated control element to enable said dedicated control element to distinguish between virtual objects within said set and virtual objects not within said set, and

thereby allowing said dedicated control element to control virtual objects within said set.

45. A method for facilitating interaction by a plurality of users at a plurality of client terminals with at least a first object, said first object having display characteristics and functional characteristics, in a networked virtual reality environment; said method comprising:

encapsulating the display characteristics in a display and interaction part of said first object,

encapsulating functional characteristics in a functional part of said first object,

downloading said display and interaction part of said first object to user client terminals, and

retaining said functional part of said first object at a remote location networked with said user client terminals,

said interactions comprising trading using said objects.